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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON 25, D. C.

In cooperation with State, Federal, and Other Agencies

COTTON INSECT CONDITIONS FOR WEEK ENDING AUGUST 12, 1949
(Ninth Cotton Insect Survey Report for 1949)

Reports from the various States indicate that the boll weevil situation continues to remain serious as it has been throughout the season. On August 5, C. F. Stiles, Extension Entomologist in Oklahoma wrote: "Boll weevils are so thick here in Oklahoma that you almost have to wear a bee veil to keep them out of your face. Many of the old experienced county agents state that they have never seen boll weevils as numerous in Oklahoma as they are this season."

E. W. Dunnam reported on August 12: "Records indicate that general boll weevil migration has covered the entire Delta area of Mississippi. Weevil damage was found in all of 168 fields examined. One year ago only 136 of 233 fields examined had weevil infestations. This was approximately 58% of the fields infested, as compared with 100% this year."

INSECTICIDES

MISSISSIPPI: E. W. Dunnam, Stoneville, reported on August 12: "A limited supply of poison is yet coming on the market. All farmers calling this office indicate that they were able to obtain some kind of insecticide. Apparently calcium arsenate is the most plentiful poison in this area. Practically all young cotton that has not been poisoned is now developing aphid infestations. This condition is causing some farmers to use the 3-5 or 3-5-40 mixture that they were holding in reserve to control aphids should they develop following the use of some of the other insecticides for the control of boll weevils."

Clay Lyle, Entomologist, reported on August 15: "Limited supplies of 3-5 or 3-5-40 are available in some counties. Farmers are urged to use calcium arsenate to protect young bolls. Where supplies of 3-5 are also available it is suggested that this be alternated with calcium arsenate, or reserve the 3-5 for a final application where two or more treatments with calcium arsenate are used."

T.M. Patterson, State Administrative Officer, PMA, Jackson, wrote on August 5: "A critical situation has developed in the supply of toxaphene, the most popular boll weevil poison material being used in Mississippi this year. Many farmers are totally unable to get any toxaphene, and the price is approaching black market proportions. Prices being asked now run about five cents per pound above what it was at the beginning of the season. Plenty of calcium arsenate is available but farmers are not using it. One reason is the frequency of rains throughout poisoning season so far has been such as to reduce the effectiveness of calcium arsenate. The demand has been for a quicker acting poison such as toxaphene."

LOUISIANA: C. B. Haddon, Superintendent, Northeast Louisiana Experiment Station, St. Joseph, wrote on August 12: "While the shortage has been very acute and prices high, I believe most farmers have succeeded in securing supplies but perhaps not the kind and amount they would wish."

R. C. Gaines reported on August 12: "The poison situation remains about the same with more and more substitute materials appearing on the market. The supply of 3-5-40 appears a little more limited now; however, it may appear so because so many want the mixture for aphids, while heretofore they could use, if available, either calcium arsenate or toxaphene."

OKLAHOMA: C. F. Stiles, Extension Entomologist, reported August 11: "The organic insecticide situation is still critical, and some farmers are now discontinuing dusting. There are a few truck loads of organic insecticides coming into the State each week, but not nearly enough to meet the demand."

Excerpts from WEEKLY COTTON WEATHER BULLETIN issued by the Weather Bureau, U. S. Department of Commerce, New Orleans, Louisiana, August 9:

ALABAMA: Cotton picking fairly active extreme south but opening slowly, favorable for weevils but control continues.

ARIZONA: Cotton weedy due rain, requires extra chopping; insects Safford area being controlled.

ARKANSAS: Condition cotton northern half good, southern half fairly good, progress generally fairly good, opening some localities.

CALIFORNIA: San Joaquin cotton making fine to excellent progress, bolls generally large and setting nicely; Palo Verde cotton progressing normally.

GEORGIA: Cotton picking fairly active to good progress south, bolls developing well north and central; weather favorable for weevils.

LOUISIANA: Cotton condition fairly good to good but weevils continue unabated under conditions unfavorable for checking.

MISSISSIPPI: No rain of importance except in southwest; more favorable week for growth cotton and for checking weevils and shedding.

NEW MEXICO: Heavy leaf spot damage to cotton Chavez County.

NORTH CAROLINA: Boll weevil activity increased under moist conditions; heavy infestation reported northern coastal plains.

OKLAHOMA: Cotton condition fair, little ginning but generally picking early crop at least a week away, condition southeast fair to good.

SOUTH CAROLINA: Cotton condition, progress only fair account too much rain causing rank growth and heavy shedding with heavy weevil activity.

TENNESSEE: Cotton condition good, weather moderately favorable for weevils.

TEXAS: Showers central and east favored insects, interfered with control measures.

THE TEXAS WEEKLY CROP AND WEATHER BULLETIN, Austin, August 8, stated: "Scattered showers in some Low Rolling Plains and Edwards Plateau counties were beneficial to cotton, but more frequent showers in eastern and central areas favored increased insect numbers and interfered with control measures."

BOLL WEEVIL

VIRGINIA: Boll weevil populations have increased rapidly during the past two weeks in Nansemond County. G. M. Boush, Assistant Entomologist, Tidewater Field Station, Holland, examined 8 fields on August 11 and reported that the infestations in these fields varied from 49 to 92% with an average of 69% punctured squares. Two weeks previously on July 27 the same fields were examined and the highest infestation reported was 12% punctured squares. The average of the 8 fields at that time was

5% punctured squares. If this rapid increase in the boll weevil population is general in the other cotton-growing counties of Virginia, the boll weevil is likely to cause more reduction in yield this year than during any year since 1939.

NORTH CAROLINA: Boll weevils are very abundant in the eastern half of North Carolina In the examination of 87 fields in 17 counties only two fields were found with less than 80% of the squares punctured. These fields are in Halifax and Wake Counties. In 7 fields the infestations range between 80 and 90%, in 12 fields between 90 and 95%, and in 66 fields 95% or more of the squares were punctured.

The report for the week ending August 12 on Cotton Insect Conditions, prepared by W. M. Kulash and J. E. Clement, issued by the Extension Service contains the following: "In most fields which have gone undusted, few squares and blooms remain. Some of the fields previously used in this weekly survey were so lacking in squares that it was necessary to discontinue examinations in these fields and add new fields of younger cotton where more squares were available. In undusted cotton almost all young bolls are being damaged; also many older, more mature bolls are being punctured In fields where square infestations have been greater than 90% during the past two weeks, about as many adult weevils can be found working in the young bolls as in the remaining squares.

"This week in addition to making square counts in each field, examinations were made to determine the average number of adult weevils found in 100 squares examined in each field. The average number of adult weevils per 100 squares for the 17 counties examined was 28. In some undusted fields, as many as ten weevils were found in each of a number of squares. In one field 91 weevils were found in the 100 squares examined.

"In fields where cotton has been dusted regularly and properly since 10% of the squares were first found to be punctured, many blooms and squares remain unpunctured, and few mature bolls have been damaged. But in order to save these squares and bolls, the farmer must continue to dust every 5 to 7 days. Here are some statistics to show the dangers of incomplete dusting. One field in Edgecombe County two weeks ago had less than 20% of its squares punctured after 3 applications of toxaphene. The farmer assumed that any further dust would only be wasted. In the last two weeks the square infestation has increased to over 90%, and many bolls have been damaged."

SOUTH CAROLINA: Conditions were ideal for cotton. Practically all fields are now mature and the cotton is beginning to open. Hot weather and a poor root system have caused an unusual amount of shedding during the past 3 weeks. The top crop generally is light. Several fields where poisoning has been continued are still blooming. The average infestation in 59 fields in 13 Piedmont counties was 90% punctured squares In 6 poisoned fields in 5 counties the infestation averaged 34% punctured squares.

L. M. Sparks, Jr., Extension Specialist, submitted the following on August 13:

"REPORT OF BOLL COUNTS MADE IN COMMUNITY-WIDE DUSTING DEMONSTRATION LOCATED IN THE HOPEWELL COMMUNITY OF LAURENS COUNTY.

"Average number of bolls per 10 feet where poison applied 146.
Average number of bolls per 10 feet where no poison applied 75.
Average percent young bolls punctured where four or more poisons applied 27%.
Average percent young bolls punctured where two or more poisons applied 70%.
Average percent young bolls punctured where no poison used 100%."

GEORGIA: Conditions were favorable for cotton growth and poisoning operations in the Piedmont. Weevils are being held in check in many fields by the use of insecticides, while in unpoisoned fields more than 50% of the squares are punctured. Poisoning should be continued in most fields throughout August in the Piedmont if satisfactory yields are to be produced. Weevils are very plentiful in all Coastal Plains fields. Most cotton in the southern and central counties is opening and further serious weevil damage is improbable; but in northern counties where cotton is still fruiting, poisoning should be continued. Weevil infestation was found in all of the 159 fields examined in 47 Piedmont counties. The infestation ranged from 1 to 10% in 36 fields, from 11 to 25% in 53 fields, from 26 to 50% in 42 fields, and more than 50% of the squares were punctured in 28 fields.

ALABAMA: Andrew J. Darby, Florence, wrote concerning boll weevil as follows: "We had a bad siege in 1939, but this year is far worse for us than any previous year. We were hit harder than any other part of our county."

Boll weevil infestations increased rapidly in 11 northeastern counties during the past 2 weeks. One field in Morgan County had 100% of the squares punctured and a very high population of adult weevils. Weevils were not emerging in great numbers in the other 10 counties examined. The average infestation in 51 fields was 65% punctured squares. The infestation ranged from 1 to 25% in 5 fields, from 26 to 50% in 7 fields, from 51 to 75% in 17 fields, and over 76% of the squares were punctured in 22 fields.

MISSISSIPPI: Records indicate that general migration has covered the entire Delta area of the State. Weevil damage was found in every field examined. Most of the low infestations reported were in young cotton or in fields that were being poisoned. One year ago only 136 of the 233 fields examined had weevil infestations. This was approximately 58% of the fields infested as compared with 100% this year. The average infestation in 168 fields in 16 Delta counties was 62% punctured squares as compared with 25% a year ago. The infestation ranged from 1 to 10% in 9 fields, from 11 to 25% in 26 fields, from 26 to 50% in 21 fields, and in 112 fields more than 50% of the squares were punctured.

The Delta and Pine Land Company in Bolivar County reported weevil infestation in 180 of the 184 fields examined. B.J. Young, Production Manager, states: "Weevils have spread everywhere. The low infestation records seem to occur where the aphids are extremely heavy. The heavy aphids are all on unpoisoned cotton. Wherever poison has not been washed off, we apparently have gotten excellent results. Cotton generally is blooming well."

LOUISIANA: Conditions have been much more favorable for effective boll weevil poisoning. Only a few local showers occurred in the northeastern part of the State during the week. The average boll weevil infestation in 489 fields examined in Ouachita, Richland, East Carroll, and Madison Parishes was 46% punctured squares as compared with 32% last week and 29% two weeks ago. Weevil infestation was found in 487 of the 489 fields examined. The infestation ranged from 1 to 10% in 48 fields, from 11 to 25% in 103 fields, from 26 to 50% in 122 fields, and over 50% in 214 fields

C. B. Haddon, Superintendent, Northeast Louisiana Experiment Station, St. Joseph, wrote on August 12: "The migration of weevils is now on here and some farmers are giving up. We know this is a serious mistake and we are urging everyone to continue the fight for some weeks yet."

ARKANSAS: Weather conditions in general have been unfavorable for effective boll weevil control in some southwestern counties. The average infestation in 231 fields in Little River and Lafayette Counties was 46% punctured squares. The infestation ranged from 1 to 10% in 9 fields, from 11 to 25% in 23 fields, from 26 to 50% in 106 fields, and over 50% in 93 fields.

TEXAS: Most of the early planted cotton except in western areas is now mature and no longer attractive to insects. However, many fields of late planted cotton in the upper coastal area and in central and northern areas are still fruiting and attractive to boll weevils. Weevils are doing heavy damage in many late-fruiting fields in central, north central, and in northeastern areas. These fields are serving more or less as trap plots for the concentration of migrating weevils. Continued application of insecticides to protect late squares or immature bolls from weevil damage will still be profitable in some fields, especially where late-fruiting cotton is grown on fertile land with plenty of moisture.

With cotton maturing early in many sections of the State this year, especially in the eastern half, farmers should do everything possible to destroy cotton stalks early. Early fall destruction of cotton stalks is the first important step toward reducing weevil damage the following year. When cotton stalks are plowed under early, the soil is enriched and many boll weevils starve before they can enter hibernation. Prepare now for thorough early destruction of cotton stalks.

OKLAHOMA: Local showers and general rains over the greater part of the State were favorable for weevil development. Most fields of early-planted cotton are now mature and squares are scarce. Weevils continue to migrate in large numbers to fields of late-planted cotton that are still fruiting. The average infestation in 128 fields in 20 counties was 45% punctured squares. Weevils were found in 125 of the 128 fields examined. No weevils were found in 2 fields in Garvin County and 1 field in Carter County.

C. F. Stiles, Extension Entomologist, reported on August 13: "Fifteen or more cotton farmers in Johnston County in the Russett Community agreed to dust their late cotton not less than 3 times. Weevils were just beginning to move into the fields on August 11 and dusting got underway the next day."

BOLLWORM

TEXAS: Reports to date show only light scattered bollworm infestations in northwestern areas, especially around Lubbock. In most all fields infestations have not reached the damaging point. In many areas rains and irrigation are keeping the cotton in a green, succulent state of growth which is attractive to bollworms. Growers in northwestern areas should keep a close watch for bollworms but dusting should not be done unless it is needed.

OKLAHOMA: Bollworm eggs and worms in all stages of development can be found in practically all cotton fields in central and eastern counties at the present time. Severe damage may occur in all fields of late-planted cotton where the bollworms appear and no control measures are taken.

LOUISIANA: Bollworm infestations were reported in a few fields in Richland and East Carroll Parishes.

ARKANSAS: Bollworm infestation decreased in the southwestern part of the State.

MISSISSIPPI: Clay Lyle, Entomologist, reported on August 15: "Farmers in several sections of the State reported local damage from bollworms. Lice were numerous in some fields but no general infestation has occurred."

ALABAMA: Damage from lepidopterous larvae was noted in 4 fields in the northwestern part of the State.

COTTON LEAFWORM

TEXAS: Cotton leafworms were found in Jackson County on August 8 by A. S. Pela, making a total of 5 counties infested to date. Only scattered light infestations have been noted. It appears unlikely that this insect will increase in sufficient numbers to spread to other areas of the State before it is too late to cause damage.

MISCELLANEOUS INSECTS

TEXAS: The garden webworm, *Loxostege similalis* (Guen.), was reported by K. P. Ewing as causing damage to cotton near Mt. Calm, Hill County, Texas. (det. H. W. Capps)

B. L. Owen collected lepidopterous larvae on cotton in the North and South Plains areas of Texas during June and July that included the garden webworm, *Loxostege similalis* (Guen.), from Floyd County on June 15, from Dawson County on June 27, and from Hockley County on July 8; the yellow-striped armyworm, *Prodenia ornithogalli* (Guen.), from Lynn County on June 20, from Dawson County on June 27, from Terry County on June 28, from Lubbock County on July 5, and from Lamb County on July 7; the cabbage looper, *Trichoplusia ni* (Hbn.), from Dawson County on June 27 and another similar looper of the *Autographa* group from Lynn County on June 27; *Laphygma* sp. from Crosby County on June 15; the green clover worm, *Plathypena scabra* (F.), from Floyd County on June 15; *Tathorhyncus angustiorata* (Grt.) from Floyd County on June 15; *Caenurgina* sp. from Floyd County on June 15; and the cotton square borer, *Strymon melinus* (Hbn.), from Terry County on July 5.

Among the minor pests of cotton collected in the Lower Rio Grande Valley during April by Glen Johnson and W. E. Gunderson were two beetles of the family Chrysomelidae that were determined by H. S. Barber as *Colaspoides macrocephala* (Schaeffer) and *Diabrotic undecimpunctata howardi* (Bar.), the latter being the notorious spotted cucumber beetl or southern corn rootworm.

Herman S. Mayeux, San Benito, collected lepidopterous larvae on cotton in the Lower Rio Grande Valley of Texas early in the summer. The insects he submitted were determined by H. W. Capps as follows:

> Salt-marsh caterpillar, *Estigmene acrea* (Drury) from Rangerville
> Cabbage looper, *Trichoplusia ni* (Hbn.) from San Benito and Rio Hondo
> Bollworm, *Heliothis armigera* (Hbn.) from San Benito and Rio Hondo
> Yellow-striped armyworm or cotton boll cutworm, *Prodenia ornithogalli* (Guen.) from Rangerville, and
> *Prodenia* sp. from San Benito and Rio Hondo

LOUISIANA: Aphids and honeydew have been observed and reported in a number of fields in Madison Parish.

ARKANSAS: Aphid populations continue to rise in some fields following the use of insecticides in the southwestern part of the State.

ALABAMA: C. M. Jones reported on August 12: "*Euphoria sepulchralis* Fab. (tentative identification). This beetle was found feeding on bolls in Fayette and Lawrence County. They appeared to be feeding on bolls damaged by worms or other insects. They were not very numerous."

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

ARIZONA: The injurious insect populations have decreased in the Salt River Valley as a result of the intensive control program during past weeks. Lygus spp. and stink bugs are present in small numbers in a few late-planted fields. Light infestations of bollworms were noted in many fields throughout the valley, but none of the fields need control measures at the present time. The injurious insect populations are low in Pinal, Pima, Santa Cruz, Cochise, and Graham Counties, and little dusting or spraying was done during the week.

NEW MEXICO: W. A. Stevenson reported on August 10: "In the Pecos Valley (Chaves and Eddy Counties) plant bug infestations, (Lygus, superb plant bug, and fleahopper) are very low in both counties. Both 10% DDT and 10% toxaphene have given excellent control. The bollworm infestations in both counties range from light to fairly heavy. Control is underway where needed, principally with 10% DDT. Angular leaf spot is causing serious damage to large acreages near Roswell; in some fields the damage to date is practically 100%. The disease is being aggravated by frequent showers. It is also fairly general over a large part of the valley. This disease and extensive hail damage will no doubt reduce the average yield over past years.

"Angular leaf spot is also causing some damage in Lee County. The principal injurious insects are fleahoppers and bollworms but generally the infestations are low. Most of the cotton has been dusted and dusting is still underway even in fields with low infestations. The cotton is late and susceptible to insect damage for several more weeks. The acreage is estimated in excess of 60,000 acres, the large increase coming in 1949. Insecticide supplies are ample in all areas visited."

TEXAS: Weather conditions were favorable for bollworm propagation in the El Paso Valley. Scattered showers and wind interfered with the application of insecticides. Bollworm continues to be the major insect pest in the El Paso area. The examination of 4,100 terminals in 41 fields showed an average of 2.2 larvae and 7.9 eggs per 100 terminals. The range was from 0 to 9 larvae and 0 to 34 eggs per 100 terminals. Large acreages of cotton have been poisoned for bollworm control in the El Paso Valley and good control has been obtained in most cases where the applications were properly timed and applied.

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